

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
31 July 2003 (31.07.2003)

PCT

(10) International Publication Number
WO 03/061714 A3

(51) International Patent Classification⁷: C02F 1/461,
A62D 3/00, D25F 5/00

(21) International Application Number: PCT/US03/02151

(22) International Filing Date: 24 January 2003 (24.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/350,352 24 January 2002 (24.01.2002) US

(71) Applicant (for all designated States except US): **THE C & M GROUP, LLC [US/US]**; 8225 Madrillon Estates Drive, Vienna, VA 22182 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CARSON, Roger, W.** [US/US]; 8225 Madrillon Estates Drive, Vienna, VA 22182 (US). **BREMER, Bruce, W.** [US/US]; 18300 Feathertree Way, Apartment 304, Montgomery Village, MD 20886-6318 (US).

(74) Agents: **WRAY, James, C.** et al.; 1493 Chain Bridge Road, Suite 300, McLean, VA 22101 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

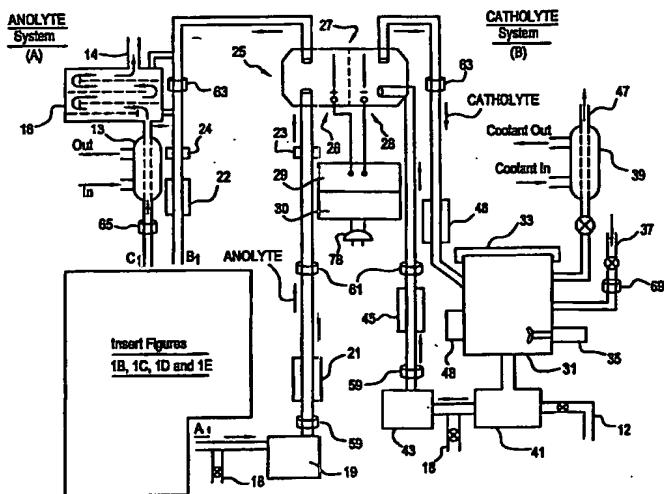
Published:

— with international search report

(88) Date of publication of the international search report:
13 November 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MEDIATED ELECTROCHEMICAL OXIDATION OF DESTRUCTION OF SHARPS



WO 03/061714 A3

(57) Abstract: Sharps are introduced into an apparatus for contacting the sharps with the electrolyte containing the oxidized form of one or more reversible redox couples, at least one of which is produced electrochemically by anodic oxidation at the anode (26) of an electrochemical cell (25). A definition of sharps is "objects or devices having acute rigid corners, edges points or protuberances capable of cutting or penetrating the skin". The oxidized forms of any other redox couples present are produced either by similar anodic oxidation or reaction with the oxidized form of other redox couples present and capable of affecting the required redox reaction. The oxidized species of the redox couples oxidize sharps and the biological waste on the sharps and are themselves converted to their reduced form, whereupon they are reoxidized. The oxidation process will be enhanced by the addition of ultrasonic energy and/or ultraviolet radiation.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :C02F 1/461; A62D 5/00; D25F 5/00

US CL :205/688, 701, 703, 746, 749; 588/204; 204/259, 262, 263, 266

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 205/688, 701, 703, 746, 749; 588/204; 204/259, 262, 263, 266

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 6,402,932 B1 (BREMER et al) 11 June 2002, see claims 1-70.	1-93
Y	4,752,364 A (DHOOGE) 21 June 1988, see claims 1-22.	1-93
Y	5,952,542 A (STEELE) 14 September 14, 1999, see claims 1-14.	1-93
Y	5,911,868 A (BALAZS et al) 15 June 1999, see claims 1-5.	1-93

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

22 JUNE 2003

Date of mailing of the international search report

07 JUL 2003

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ARUN S. PHASGE

Telephone No. (703) 308-0661